

ABSTRACT

This invention provides a method of preparing microsphere composite of collagen and bioceramic powder. This method first mixes a collagen solution with bioceramic powder and alginate, and squeezes the mixture solution to spherical droplets being discharged into a divalent cation solution undergoing gelling to form microspheres. Next, the microsphere is coated with a chitosan solution. Then, interior alginate and surface chitosan of the microsphere are liquefied and washed out with an aqueous buffer solution such as phosphate based buffer, and collagen in the microsphere is reconstituted to fiber network at the same time. The prepared microsphere composite has similar composition components of bone tissue, and the collagen thereof has a network of reconstituted fibers. The microsphere composite of this invention provides a similar growth environment of bone tissue cells, is used as a carrier to carry cells, coat and fix bone growth factors, and is applied in bone repair.